

Mineral Industry Surveys

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PRECIOUS METALS IN JULY 2002

U.S. mines produced 21,600 kilograms (kg) of gold and 117,000 kg of silver in July 2002. Compared with June 2002, production of gold was down 15% in California and production of silver was up 16% in Nevada. Table 8 lists the top 30 gold-producing mines in the United States for the first 6 months of 2002.

Gold

Domestic.—Barrick Gold Corp. reported that its Ruby Hill gold mine near Eureka, NV, is scheduled to close in October 2002. The open pit mine, which was opened in 1997, has reached the end of its reserve life (Platts Metals Week, 2002a).

International.—Six new investors have expressed interest in restarting the suspended Las Cristinas gold project in Venezuela's Bolivar state. The interested parties are South Africa's Gold Fields Ltd. and Canadian companies Barrick Gold Corp., Gold Corp., Crystallex International Corp., Gammon Lake Resources Inc., and Gold Reserve Inc. (Platts Metals Week, 2002a).

Germany's central bank, Deutsche Bundesbank, wants the option to sell some of its gold bullion when the international agreement to limit gold sales expires in 2004. Bundesbank's gold holdings of 3.5 million kg (112.5 million troy ounces), the world's second largest behind only the United States, is equal to about 16 months of the total supply from gold mines worldwide (American Metal Market, 2002a).

In South Africa, a worker died and two others were injured when an underground earth tremor occurred at the Driefontein Mine. The death toll at South African gold mines so far in 2002 is 94. In central Asia, a worker died after a 200-meter-high section of wall of an open pit at the Kumtor gold mine in Kyrgyzstan collapsed; mining operations were halted. The incident, following three others at the mine, prompted criticism from an international coalition of environmental groups lead by

the Mineral Policy Center (Washington, DC), which called for an environmental and safety audit of the Kumtor gold mine (American Metal Market, 2002b).

Société Générale (SG), the corporate and investment banking arm of Société Générale Group has joined the exclusive group of companies that determine gold prices in London. SG replaced Credit Suisse First Boston International, which left the group last October. With the addition of SG, the number of banks that contribute to setting the gold rate returned to 10 (American Metal Market, 2002c).

Silver

Improved performance from operations in the first half of 2002 prompted Hecla Mining Company, Coeur d'Alene, ID, to increase its 2002 production estimates to approximately 249,000 kg of silver and 6,690 kg of gold. Hecla's silver production totaled 71,500 kg in the second quarter and 134,000 kg in the first half of 2002. The average total cash cost reportedly decreased 39% during the second quarter from \$3.30 per ounce to \$2.00 per ounce when compared to the same period in 2001. Hecla's Greens Creek Mine in Alaska, in which the company holds a 29.73% interest, produced 178,000 kg of silver in the first half of 2002 at an average cash cost of \$1.68 per ounce, including byproduct credits. The Lucky Friday Mine contributed just over 31,100 kg of silver in the first half of 2002 at an average total cash cost of \$4.29 per ounce, excluding approximately \$400,000 in care and maintenance costs. Hecla's San Sebastian Mine in central Mexico produced about 49,800 kg of silver in the first half of 2002 at an average cash cost of \$1.38 per ounce (Hecla Mining Company, 2002).

In May, Pan American Silver Corp. announced plans to take over Corner Bay Silver, a Toronto exploration company that owns the Alamo Dorado silver deposit in Mexico. According to Pan American Silver, the Alamo Dorado deposit contains proven and probable reserves (calculated at \$4.60 per ounce for silver and \$300 per ounce for gold) of about 36 million metric tons grading 67 grams (g) of silver and 0.26 g of gold per metric ton (t), or 2,400 t of silver and 9,200 kg of gold. A bankable feasibility study was completed in July 2002 that recommends construction of a heap-leach mine to produce an average of 186 t of silver and 900 kg of gold per year at a total cash cost of \$3.25 per ounce of silver equivalent over an 8-year mine life and an 11-year project life (Pan American Silver Corp., 2002).

Platinum-Group Metals

Anglo American Platinum Corporation (Anglo Platinum), the world's leading platinum producer, plans to increase its annual platinum production to 112,000 kg by 2006. Anglo Platinum accounts for more than half of South Africa's 72% share of world platinum production. The expansion in output will be from a number of new mines as well as expansions and further mechanization of existing operations. A state-of-the-art smelter is under construction at Polokwane, with commissioning scheduled for the fourth quarter of 2002. A single hatch, six-inline furnace of 68 megawatt operating power capable of smelting more than 600,000 metric tons per year of concentrate is being installed. The furnace will achieve the high operating temperatures necessary to smelt high chromite-bearing concentrates. The smelter, which will serve the Eastern Limb operations, is expected to account for 40% of Anglo Platinum's production (Mining Magazine, 2002).

On July 9, the Defense National Stockpile Center (DNSC) announced the aggregated June 2002 platinum-group metals

sales under the Basic Ordering Agreement, DLA-PGM-002. During June, DNSC sold 353.3 kg of platinum and 933.1 kg of palladium for an overall value of approximately \$16.5 million (Defense National Stockpile Center, 2002a). On August 7, DNSC announced July sales of approximately 1,400 kg of palladium for an overall value of approximately \$14.2 million (Defense National Stockpile Center, 2002b).

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 ${\bf TABLE~1}$ MINE PRODUCTION OF RECOVERABLE GOLD AND SILVER IN THE UNITED STATES, BY STATE 1/

(Kilograms)

				Other	
Gold	Alaska	California	Nevada	States 2/	Total
2001:					
July	W	1,070	20,500	5,610	27,200
August	1,370	784	21,600	3,420	27,100
September	W	699	20,700	5,000	26,400
October	W	746	21,100	7,920	29,800
November	W	793	20,800	4,810	26,400
December	W	871	24,100	4,820	29,800
January-December p/	9,190	12,100	257,000	57,300	335,000
2002:					
January	W	954	16,400 r/	4,270	21,600 r/
February	W	797	16,600 r/	3,990	21,400 r/
March	W	1,000	18,600	4,430	24,000
April	W	893	20,800 r/	4,150 r/	25,900 r/
May	W	788	18,600 r/	3,680 r/	23,000 r/
June	W	907	17,700	3,510 r/	22,100 r/
July	W	770	17,300	3,590	21,600
January-July	W	6,110	126,000	27,600	160,000
				Other	
Silver	Arizona	Idaho	Nevada	States 3/	Total
2001:					
July	W	W	43,700	87,600	131,000
August	W	W	49,300	87,500	137,000
September	W	W	48,200	72,400	121,000
October	W	W	36,500	79,200	116,000
November	W	W	45,200	74,400	120,000
December	W	W	54,400	89,100	144,000
January-December p/	W	40,600	555,000	1,010,000	1,600,000
2002:					
January	W	W	38,900 r/	85,500	124,000 r/
February	W	W	48,800 r/	78,200	127,000 r/
March	W	W	49,300 r/	89,600	139,000 r/
April	W	W	30,800 r/	83,700 r/	115,000 r/
May	W	W	36,900 r/	88,500 r/	125,000 r/
June	W	W	28,700 r/	84,800 r/	113,000 r/
July	W	W	33,400	84,000	117,000
January-July	W	W	267,000	594,000	861,000

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other States."

^{1/} Data are rounded to no more than three significant digits; may not add to totals shown.

 $^{2/\}operatorname{Includes} Arizona, \operatorname{Colorado}, \operatorname{Idaho}, \operatorname{Montana}, \operatorname{New} \operatorname{Mexico}, \operatorname{South} \operatorname{Carolina}, \operatorname{South} \operatorname{Dakota}, \operatorname{Utah}, \operatorname{Washington}, \operatorname{and} \operatorname{State} \operatorname{indicated} \operatorname{by} \operatorname{symbol} \operatorname{W}.$

^{3/} Includes Alaska, California, Colorado, Missouri, Montana, New Mexico, New York, South Carolina, South Dakota, Tennessee, Utah, Washington, and States indicated by symbol W.

TABLE 2 SELECTED PRECIOUS METAL PRICES

(Dollars per troy ounce)

	Gold	Silver	Platinum	Palladium
Engelhard Industries:				
2001:				
Low/date	257.04 April 2	4.05 November 26	419.00 November 7	319.00 November 13
High/date	294.40 September 17	4.87 January 30	645.00 January 10 and 15	1,100.00 January 26
Average	272.22	4.39	533.31	610.61
2002:				
May:				
Low/date	308.77/2	4.55/2	522.00/2	350.00/31
High/date	328.26/29	5.08/31	551.00/30	385.00/16
Average	315.28	4.74	536.91	360.00
June:				
Low/date	317.99/11	4.83/25	544.00/27	320.00/26
High/date	330.66/4	5.15/4	569.00/20	358.00/4
Average	323.07	4.92	558.50	339.20
July:				
Low/date	304.17/29	4.62/31	524.00/23 and 24	319.00/1
High/date	324.10/19 and 22	5.15/15	536.00/15	334.00/29
Average	314.70	4.94	529.67	325.52
Year to date:				
Low/date	278.62 January 29	4.26 January 31	454.00 February 1	319.00 July 1
High/date	330.66 June 4	5.15 June 4 and July 15	569.00 June 20	439.00 January 3
Average	304.46	4.67	518.71	366.38
Handy and Harman:				
2001, Average	271.06	4.39	XX	XX
2002:				
May	314.08	4.74	XX	XX
June	321.81	4.92	XX	XX
July	313.51	4.95	XX	XX
Average year to date	303.29	4.67	XX	XX
London Final: 1/				
2001, Average	270.99	4.37	XX	XX
2002:				
May	314.49	4.71	XX	XX
June	321.18	4.89	XX	XX
July	313.29	4.92	XX	XX
Average year to date	303.24	4.65	XX	XX

XX Not applicable.

1/ Silver price reported as "London Spot/US Equiv."

Source: Platts Metals Week.

$\label{eq:table 3} \mbox{U.S. IMPORTS AND EXPORTS OF GOLD 1/}$

(Kilograms of gold content, unless otherwise specified)

Period and country	Ores and concentrates 2/	Doré and precipitates	Refined bullion 3/	Ash and residues	Total 4/	Waste and scrap (gross weight)	Metal powder (gross weight)	Gold compounds (gross weight)
Imports for consumption:								
2001	1,260	31,100	161,000	193	194,000	26,400	9,450	1,960
2002:	_							
April	275	2,430	17,800		20,500	808	355	44
May	- 6	2,100	21,500		23,600	1,020	562	5,320
June:	_							
Aruba			155		155			
Brazil			1,280		1,280	1		
Canada	512		14,200		14,700	146	5	
Chile			450		450			
Colombia		541	47		588	5	229	
Dominican Republic			43		43	250	26	
Honduras		430			430		419	
Japan	 		193		193			1,370 5/
Mexico		54	60		113	52	2	
Nicaragua		248			248			
Norway			124		124			
Panama		80	72		152	25		
Peru		1,250			1,250			
Other	_ 2	42	88		132	110	6	33 5/
Total	514	2,650	16,700		19,800	590	688	1,400
Year to date	804	13,800	91,200		106,000	5,700	7,170	6,890
Exports:	_							
2001	361	93,900	395,000		489,000	40,100	11,600	492,000
2002:	_							
April	38	8,640	9,920		18,600	1,290	1,690	51,500
May	44	5,550	10,400		16,000	6,230	1,590	50,400
June:								
Australia	_							783 5/
Cambodia								2,380 5/
Canada			26		26	2,840		25,100 5/
China								817 5/
Dominican Republic	_ 38				38			
Germany			4		4	1,760	27 5	
Hong Kong	6		(6/)		6		12	2,030 5/
Israel			1		1	5	1	4,620 5/
Mexico			454		454		666	924
Netherlands								4,070 5/
Peru			119		119		77	
Singapore			3		3		12	
Switzerland	- 	5,950	10,100		16,000	1,970	95	
United Kingdom	 		4,630		4,630	6,720	36 5	/ 3,960 5/
Other	<u> </u>	4	212		216	115		
Total	44	5,960	15,500		21,500	13,400	927	44,700
Year to date	300	29,800	80,900		111,000	23,300	8,740	189,000

⁻⁻ Zero.

 $^{1/\,\}text{Data}$ are rounded to no more than three significant digits; may not add to totals shown.

^{2/} Includes gold content of base metal ores, concentrates, and matte imported for refining.

^{3/}Bullion also moves in both directions between U.S. markets and foreign stocks on deposit in the Federal Reserve Bank. Monetary gold excluded.

 $^{4\!/}$ "Waste and scrap," "Metal powder," and "Gold compounds" not included in "Total."

^{5/} All or part of these data have been referred to the U.S. Census Bureau for verification.

^{6/} Less than 1/2 unit.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF SILVER 1/

(Kilograms of silver content, unless otherwise specified)

						Other			Semimanu-	
			Ores			unwrought	Metal	Silver	factured	Waste
			and	Ash and		silver	powder	nitrate	form 3/	and scrap
Period and country	Bullion	Doré	concentrates 2/	residues	Total	(gross weight)				
2001	2,940,000	151,000	7,550	38,000	3,130,000	249,000	24,200	26,000	153,000	1,110,000
2002:										
April	417,000		182	5,640	422,000	10,400	249	23	22,800	45,700
May	383,000	341	295	9,520	393,000	18,000	672	9	16,200	138,000
June:										
Australia				266	266				100	170
Brazil									9,490	153
Canada	112,000			1,040	113,000	416 4/			733 4/	6,560
Chile	4,000				4,000					
China	18,000				18,000					624
Costa Rica										137
Dominican Republic										1,130
France							575 4/		510	
Germany							160		1,260 4/	1,850
Italy		58 4/			58	2 4/			536 4/	6
Jamaica										568
Japan						17 4/	192 4/		556	1
Korea, Republic of							(5/) 4/		769	802
Mexico	137,000	533		143	137,000	10,500 4/			(5/) 4/	2,520
Panama										88
Peru	13,000				13,000					
Philippines										13,000
Poland									1,940	
United Kingdom				2,560	2,560			500	161	20,700
Other				80	80		40 4/		44 4/	60
Total	283,000	591		4,080	288,000	10,900	967	500	16,100	48,400
Year to date	2,090,000	1,680	2,670	36,300	2,130,000	81,100	4,530	532	113,000	310,000

⁻⁻ Zero.

^{1/} Data are rounded to no more than three significant digits; may not add to totals shown.

^{2/} Includes silver content of base metal ores and concentrates.

^{3/} Containing 99.5% or more by weight of silver.

⁴ All or part of these data have been referred to the U.S. Census Bureau for verification.

^{5/} Less than 1/2 unit.

TABLE 5 U.S. EXPORTS OF SILVER 1/

(Kilograms of silver content, unless otherwise specified)

					Other			Semimanu-	
			Ores		unwrought	Metal	Silver	factured	Waste
			and		silver	powder	nitrate	form 3/	and scrap
Period and country	Bullion	Doré	concentrates 2/	Total	(gross weight)				
2001	707,000	18,200	239,000	963,000	48,800	187,000	143,000	203,000	1,810,000
2002:									
April	56,900	2,100	17,900	76,900	5,450	18,000	7,520	18,000	187,000
May	20,100	1,980	18,000	40,000	339	18,200	6,190	17,100	212,000
June:									
Armenia								59	
Australia							12,300		
Belgium								211	12,000
Canada	685			685	143	1,220	2,140	47,500 4/	102,000
China						585			32,100
Dominican Republic					78			85	
France						2,360		951	
Germany					10 4/	4,060		1,420 4/	18,900
Hong Kong					176 4/	1,600		362	15
India					26			45	581
Italy						98		247	14,400
Japan						1,620		6,590	
Korea, Republic of					226	973		2,950	
Lebanon						116			
Mexico			39,500 4/	39,500		427	343	2,060	
Netherlands					91 4/	260		643	
Niger						578			
Saudi Arabia									6,570
Singapore					14 4/	156		647 4/	
Spain								1,240	
Sweden						277		17	30,400
Switzerland		1,530		1,530		45		87	
Taiwan						6,540		912	466
Thailand					31 4/	21		111	
Trinidad and Tobago		6 4/		6				53	
United Kingdom	18,900			18,900	44	5,110	229 4	/ 469	5,830
Other					42 4/	80		123	
Total	19,600	1,540	39,500	60,700	881	26,100	15,000	66,700	223,000
Year to date	429,000	10,400	111,000	550,000	22,100	102,000	42,900	142,000	1,270,000

⁻⁻ Zero.

 $^{1/\,\}textsc{Data}$ are rounded to no more than three significant digits; may not add to totals shown.

^{2/} Includes silver content of base metal ores and concentrates.

^{3/} Semimanufactured (including silver plated with gold or platinum) forms of silver.

⁴/ All or part of these data have been referred to the U.S. Census Bureau for verification.

 ${\bf TABLE~6}$ U.S. IMPORTS FOR CONSUMPTION OF PLATINUM-GROUP METALS 1/

(Kilograms of metal content)

	Platinum		Other		Platinum							
	grain and	Platinum	unwrought	Platinum,	waste and	Platinum	Unwrought	Palladium,		Unwrought	Unwrought	
Period and country	nuggets	sponge	platinum	other	scrap	coins	palladium	other	Iridium 2/	osmium	ruthenium	Rhodium 3/
2001	2,480	68,700	3,660	5,330	3,960	53	146,000	13,600	3,110	77	8,170	12,400
2002:												
April	187	9,720	331	595	13,200	2	12,300	1,140	113		1,810	959
May	191	6,040	204	274	860		4,330	968	243		769	1,140
June:												
Argentina					12							
Belgium		544					635					121
Brazil					215							
Canada	(4/)			33	15,600		269					
Chile					7							
China					97		155					
Colombia			22	1	(4/)							
France					·			10				
Germany		95	63	246	9,860		305	288	20		62	30
Israel			51									
Italy		37					20	5				
Japan					3		621	94				(4/)
Korea, Republic of					5,850							
Malaysia					1,470							
Mexico					(4/)							
Netherlands				(4/)								
Norway		51					54	61				8
Russia		308					7,360	3				
South Africa	124	3,790		16			3,160	230	72		661	310
Switzerland			11	35			188	23			1 5	/
Taiwan								2				
United Kingdom		1,220	39	70	9,280		1,640	(4/)	125 5/			8
Total	125	6,040	187	402	42,400		14,400	717	217		723	477
Year to date	699	37,400	1,560	2,310	59,900	14	48,400	4,630	1,250	3	6,150	4,260

⁻⁻ Zero.

^{1/} Data are rounded to no more than three significant digits; may not add to totals shown.

^{2/} Unwrought and other forms of iridium.

^{3/} Unwrought and other forms of rhodium.

^{4/} Less than 1/2 unit.

^{5/} All or part of these data have been referred to the U.S. Census Bureau for verification.

TABLE 7 U.S. EXPORTS OF PLATINUM-GROUP METALS 1/

(Kilograms of metal content, unless otherwise specified)

			Platinum waste and	Iridium, osmium, and	
Period and country	Palladium 2/	Platinum 2/	scrap	ruthenium 2/3/	Rhodium 2/
2001	37,000	29,300	12,900	1,370	982
2002:					
April	10,200	2,510	491	78	17
May	1,770	3,660	826	202	36
June:					
Australia	22	5		4	
Austria		(4/) 5/			
Canada	316	247	246	1	(4/)
Chile		36			
China	52 5/	2			
France	44 5/	18 5/			
Germany	114 5/	234 5/	61	7	12
Haiti	2 5/				
Hong Kong	24 5/	16 5/			(4/)
India		1			(4/)
Ireland	2 5/	10		57	
Israel	4 5/				
Italy		91			
Japan	277 5/	778 5/	111	9	14
Korea, Republic of	410	3			
Malaysia	1	(4/) 5/			
Mexico	18 5/	4		2	
Netherlands	103 5/	14 5/			
New Zealand	14 5/	1			
Peru		2			
Philippines	5 5/	10 5/			
Singapore	4	3			
Slovakia	2 5/				
Slovenia	22 5/				
South Africa		10			
Spain	11 5/	2 5/			
Sweden		5			
Switzerland	5,520	13			
Taiwan	289 5/	24			(4/)
Thailand	12	14		1	(4/)
Turkey	1				
United Kingdom	248 5/		1,580	149	2 5
Total	7,520	1,940	2,000	229	28
Year to date	28,300	14,100	5,050	855	141

⁻⁻ Zero.

 $^{1/\,\}text{Data}$ are rounded to no more than three significant digits; may not add to totals shown.

^{2/} Unwrought and other forms.

^{3/} Gross weight.

^{4/} Less than 1/2 unit.

^{5/} All or part of these data have been referred to the U.S. Census Bureau for verification.

 ${\bf TABLE~8}$ LEADING GOLD-PRODUCING MINES IN THE UNITED STATES IN THE SECOND QUARTER OF 2002, IN ORDER OF OUTPUT 1/

Rank	Mine	County and State	Operator	Kilograms
1	Newmont Nevada operations 2/ 3/	Various counties, NV	Newmont Gold Company	35,600
2	Betze-Post/Goldstrike	Eureka, NV	Barrick Gold Corporation	20,800
3	Cortez	Lander, NV	Placer Dome Inc.	17,800
4	Round Mountain	Nye, NV	Round Mountain Gold Corporation	11,800
5	Meikle/Goldstrike	Elko, NV	Barrick Gold Corporation	9,360
6	Bingham Canyon 4/	Salt Lake, UT	Kennecott Utah Copper Corp.	6,840
7	Fort Knox 5/	Fairbanks, AK	Fairbanks Gold Mining Inc.	5,680
8	Jerritt Canyon	Elko, NV	Independence Mining Company, Inc.	5,170
9	Cresson	Teller, CO	Cripple Creek & Victor Gold Mining Co.	2,840
10	Getchell	Humboldt, NV	Placer Dome Inc.	1,620
11	Bald Mountain	White Pine, NV	do.	2,590
12	Barney's Canyon	Salt Lake, UT	Kennecott Barney's Canyon Mining Co.	1,520
13	Greens Creek	Juneau, AK	Kennecott Greens Creek Mining Co.	1,640
14	Denton-Rawhide	Mineral, NV	Kennecott Rawhide Mining Co.	1,420
15	Golden Sunlight	Jefferson, MT	Placer Dome Inc.	1,290
16	Wharf	Lawrence, SD	Wharf Resources, Ltd.	1,220
17	Rand	Kern, CA	Glamis Rand Mining Co.	1,180
18	Marigold	Humboldt, NV	Glamis Gold Ltd.	1,050
19	Rochester	Pershing, NV	Coeur d'Alene Mines Corp.	1,040
20	Castle Mountain	San Bernardino, CA	Viceroy Resources Corporation	1,000
21	Briggs	Inyo, CA	Canyon Resources Corp.	674
22	Kettle River	Ferry, WA	Echo Bay Mines Limited	622
23	McCoy/Cove	Lander, NV	do.	513
24	Illinois Creek 6/	Yukon-Koyukuk, AK	American Reclamation Group LLC	467
XX	Florida Canyon	Lander, NV	Florida Canyon Mining, Inc.	(7/)
XX	Ken Snyder	Elko, NV	Euro-Nevada Mining Co.	(7/)
XX	Mesquite	Imperial, CA	Newmont Gold Company	(7/)
XX	McLaughlin	Napa, Yolo, CA	Barrick Gold Corporation	(7/)
XX	Montana Tunnels	Jefferson, MT	Montana Tunnels Mining, Inc.	(7/)
XX	Ruby Hill	Eureka, NV	Homestake Mining Company	(7/)

XX Not applicable.

Sources: Company quarterly reports, Securities and Exchange Commission's 10Q reports and company news releases.

^{1/} Data are rounded to no more than three significant digits; these mines accounted for more than 99% of the U.S. gold production in the first 6 months of 2002.

^{2/} Includes Battle Mountain Gold, Carlin Mines Complex, Lone Tree, and Twin Creeks.

^{3/} Mill output

^{4/} Mine production refers to total quantity of gold produced in concentrates.

^{5/} Mine production refers to gold equivalent produced.

^{6/} Estimate from State annual report.

^{7/} Production at Florida Canyon, Ken Snyder, Mesquite, McLaughlin, Montana Tunnels, and Ruby Hill is withheld; mines are among the top 30 gold-producing mines in the United States, but are not shown in rank order to avoid disclosing company proprietary as data.